

1 WHAT IS CLAIMED IS:

1. A fan comprising:

5 a hub;

a plurality of hub struts extending radially from the
hub;

inner and outer studs extending in the axial direction of
the fan on each of the hub struts;

10 a blade mounted on each of the hub struts; and

an air seal covering the hub struts, the air seal
comprising:

a generally round central sheet, and

15 a plurality of radially adjustable segments
extending radially from the central sheet, each of the
segments comprising:

a generally trapezoidal sheet spanning the
space between adjacent hub struts,

20 a plurality of slots near radially extending
edges of the trapezoidal sheet, each slot extending
in a direction parallel to a radial line through the
center of the trapezoidal sheet, each slot engaging
25 a stud on a hub strut.

2. A fan according to claim 1 wherein each trapezoidal
sheet comprises:

30 a generally trapezoidal area; and

an L-shaped step along each radially extending edge of
the trapezoidal area, the slots being in a portion of the step
generally parallel to the trapezoidal area.

35

1 3. A fan according to claim 1 wherein each trapezoidal
sheet comprises:

 a generally trapezoidal area;

5 a wall extending in the axial direction of the fan along
the outer edge of the trapezoidal area, the wall having a
first portion normal to one adjacent hub strut and a second
portion normal to the other adjacent hub strut.

10 4. A fan according to claim 3 further comprising a brace
connecting an edge of the wall to one of the studs.

 5. A fan according to claim 3 wherein each stud is
15 threaded and further comprising a nut securing the trapezoidal
sheet to such a stud.

 6. A fan according to claim 3 wherein the edges of
20 adjacent trapezoidal sheets overlap and at least a portion of
the slots in adjacent trapezoidal sheets are aligned on a
stud.

 7. A fan according to claim 1 wherein each trapezoidal
25 sheet comprises:

 an outer edge with a first wall portion normal to one
adjacent hub strut and a second wall portion normal to the
other adjacent hub strut.

30 8. A fan comprising:
a hub;

 a plurality of hub struts extending radially from the
hub;

35

1 inner and outer studs extending in the axial direction of
the fan on each of the hub struts;

a blade mounted on each of the hub struts; and

5 an air seal covering the hub struts, the air seal
comprising:

a generally round central sheet, and

10 a plurality of radially adjustable segments spanning
the space between adjacent hub struts outwardly from the
central sheet, each of the segments comprising:

an outer edge with a first portion normal to
one adjacent hub strut and a second portion normal
to the other adjacent hub strut, and

15 a plurality of slots near radially extending
edges, each slot extending in a direction parallel
to a radial centerline of the segment, each slot
engaging a stud on a hub strut.

20 9. A fan according to claim 8 wherein each segment
comprises:

a central area; and

25 a step and flange parallel to the central area along each
radially extending edge of the central area, the slots being
in the flanges.

30 10. A fan according to claim 8 wherein each segment
comprises:

a generally trapezoidal area;

a wall extending in the axial direction of the fan along
the outer edge of the trapezoidal area,

1 11. A fan according to claim 10 wherein the wall has a
first portion normal to one adjacent hub strut and a second
portion normal to the other adjacent hub strut.

5 12. A fan according to claim 10 further comprising a
brace connecting an edge of the wall to one of the studs.

10 13. A fan according to claim 10 further comprising an
inner threaded stud and an outer threaded stud on each hub
strut and a nut securing the segment to each such stud.

15 14. A fan according to claim 10 wherein the edges of
adjacent segments overlap and at least a portion of the slots
in adjacent segments are on the same stud.

20 15. A fan according to claim 8 wherein each segment
comprises:

an outer edge with a first wall portion normal to one
adjacent hub strut and a second wall portion normal to the
other adjacent hub strut.

25 16. A fan comprising:

a hub;

a plurality of hub struts extending radially from the
hub;

30 a blade mounted on each of the hub struts; and

an air seal covering the spaces between hub struts, the
air seal comprising:

a generally round central sheet, and

35

1 a plurality of segments spanning the space between
adjacent hub struts outwardly from the central sheet,
each of the segments comprising:

5 an outer edge adjacent the roots of at least a
pair of blades, and

 means for radially adjusting the segment and
connecting the segment to each of a pair of adjacent
hub struts.

10

17. A fan according to claim 16 wherein the means for
adjusting comprises a plurality of slots near radially
extending edges of each segment, each slot extending in a
15 direction parallel to a radial centerline through the segment,
each slot engaging a stud on a hub strut.

18. A fan according to claim 16 wherein each segment
comprises:

20

a central area; and

a step and flange parallel to the central area along each
radially extending edge of the central area,

a plurality of slots near radially extending edges of
25 each segment, each slot extending in a direction parallel to a
radial centerline through the segment, each slot engaging a
stud on a hub strut.

19. A fan according to claim 16 wherein each segment
comprises:

30

a generally trapezoidal area;

a wall extending in the axial direction of the fan along
the outer edge of the trapezoidal area,

35

1 20. A fan according to claim 19 wherein the wall has a
first portion normal to one adjacent hub strut and a second
portion normal to the other adjacent hub strut.

5 21. A fan according to claim 19 further comprising a
brace connecting an edge of the wall to one of the studs.

10 22. A fan according to claim 19 wherein the means for
connecting comprises an inner threaded stud and an outer
threaded stud on each hub strut, a plurality of slots along
radially extending edges of each segment fitted over such
studs, and a nut securing the segment to each such stud.

15 23. A fan according to claim 19 wherein the edges of
adjacent segments overlap and at least a portion of the slots
in adjacent segments are on the same stud.

20 24. A fan according to claim 19 wherein the slots in
adjacent segments each are parallel to a radial centerline of
the respective segment.

25 25. A fan according to claim 16 wherein each segment
comprises:

30 an outer edge with a first wall portion normal to one
adjacent hub strut and a second wall portion normal to the
other adjacent hub strut.

35